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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/789,357 | 02/27/2004 | John Popovich | PERMLT.019C1 | 5148 |
| 20995 | 7590 | 08/25/2005 | EXAMINER | |
| KNOBBE MARTENS OLSON & BEAR LLP | | | TSO, LAURA K | |
| 2040 MAIN STREET | | | ART UNIT | |
| FOURTEENTH FLOOR | | | PAPER NUMBER | |
| IRVINE, CA 92614 | | | 2875 | |

DATE MAILED: 08/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/789,357

Applicant(s)

POPOVICH ET AL.

Examiner

laura tso

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-65 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) 2, 5-9, 12-20, 23-27, 37-45, 48-50 and 52-65 is/are rejected.
- 7) ☒ Claim(s) 3, 4, 10, 11, 21, 22, 28-36, 46, 47 and 51 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>6/1/04 & 1/11/05 & 8/16/05 & 8/19/05</u> | 6) <input checked="" type="checkbox"/> Other: <u>marked copy of figure 16</u> |

DETAILED ACTION

Specification

The disclosure should be carefully reviewed to ensure that any and all grammatical, idiomatic, and spelling or other minor errors are corrected.

The disclosure is objected to because of the following informalities:

Page 9, line 3: after "light rays" applicant should insert ~~84~~.

Page 12, line 2: applicant should change ~~40~~ to ~~30~~.

Appropriate correction is required.

Drawings

The drawings are objected to because in figure 16, applicant should change "60" to ~~160~~ (note attachment). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be

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necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. **The objection to the drawings will not be held in abeyance.**

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 2, 5-9, 17-19, 23-25, 27, 37, 39-44, 48-50, 55 and 58 are rejected under 35 U.S.C. 102(e) as being anticipated by Ishihara (6,249,267).

Ishihara discloses an illumination module [figure 1b] comprising a dielectric layer [12], a plurality of LEDs [2] and a plurality of contacts on the first side [15, figure 2], a heat conductive body [11, 4] on the second side of the dielectric layer and a heat conductive surface [5] in communication with the heat conductive body [4] where the heat is dissipated into the surrounding environment. The heat conductive surface [5], or heat sink, is a housing. The heat conductive body is flat, parallel to the contacts and complementary to the surface of the dielectric. The dielectric layer [12] is substantially planar. The heat conductive surface is larger than the surface of the heat conductive body. Inherently the LEDs comprise leads which are mounted to the contacts. The heat conductive body is formed of aluminum [column 3, line 64]. Ishihara discloses the housing [5] is a heat conductive surface [note column 5, lines 35+]. The housing [5] also acts as the wall surface. The heat sink member has an integrally formed mounting portion [hole for the screw, 6] configured to accept the LED module and the LED module is so attached. The housing or heat conductive surface [5] is flat so it may be easily mounted on any flat surface.

Claims 1, 5-9, 12-20, 23-27, 37, 39-45, 48-50, 53-55, 58, 62 and 63 are rejected under 35 U.S.C. 102(e) as being anticipated by Hochstein (6,045,240).

Hochstein discloses an illumination module comprising a planar dielectric layer [26], a plurality of LEDs [28] a plurality of contacts on the first side [connected to leads 30, 32], a flat heat conductive body [36] on the second side of the dielectric layer and a heat conductive surface [38] in communication with the heat conductive body [36] where

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the heat is dissipated to the surrounding environment. The heat conductive body is parallel to the contacts and complementary to the surface of the dielectric. The heat conductive body is aluminum [column 6, line 20] as is the heat conductive surface [column 7, line 7]. The heat conductive surface is substantially larger than the heat conductive body [note the heat conductive surface is tubular [column 5, line 13]. With respect to claims 20 and 23, the illumination modules are mounted into the front wall surface [which includes element 42] of housing [10; figure 1] so the heat conductive surface is partially in the interior of the housing. The heat sink member has an integrally formed mounting portion [flat mounting area] configured to accept the LED module and the LED module is so attached with heat conductive adhesive [58, column 9, lines 26+]. The housing or heat conductive surface [5] is flat so it may be easily mounted on any flat surface. Hochstein also discloses a housing [figure 1, 10] having an outlet aperture out of which light is directed. Element number 24 will direct light.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

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were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 12-16, 20, 38, 45, 52-54, 56 and 57 rejected under 35 U.S.C. 103(a) as being unpatentable over Ishihara.

Ishihara discloses the claimed invention except the limitation that the heat conductive surface, or the wall/housing is formed of aluminum. However, since the heat conductive body is formed of aluminum, it would have been obvious to one of ordinary skill in the art at the time the invention was made to also form the heat conductive surface of aluminum so that the heat would easily flow between the two surfaces, thus preventing a heating in the area where the two surfaces connect. It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. Likewise it would have been obvious to one of ordinary skill in the art to make the heat sink and the heat conductive body having a thermal conductivity greater than 100 W/m*K so that the thermal conductivity would allow for rapid heat dissipation.

Ishihara also does not disclose a plurality of illumination modules on the housing wall. It would have been obvious to one having ordinary skill in the art at the time the invention was made to place more than one illumination module in the housing to create

a larger display in order to display more information. It has been held that mere duplication of the essential working parts of a device involves only routine skill in the art.

Ishihara does not disclose the LED module is fastened to the mount using rivets or a heat conductive adhesive. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use either rivets or heat conductive adhesive to secure the module to the heat sink as both these methods are well known in the art, are secure methods of fastening and they offer heat conductivity.

Claims 56, 57, 64 and 65 rejected under 35 U.S.C. 103(a) as being unpatentable over Hochstein.

Hochstein does not disclose the LED module is fastened to the mount using rivets or a heat conductive adhesive. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use either rivets or heat conductive adhesive to secure the module to the heat sink as both these methods are well known in the art, are secure methods of fastening and they offer heat conductivity.

Likewise it would have been obvious to one of ordinary skill in the art to make the heat sink and the heat conductive body having a thermal conductivity greater than 100 W/m*K, in the device of Hochstein, so that the thermal conductivity would allow for rapid heat dissipation.

Hochstein does not disclose the illumination apparatus comprises a lens or a reflector. However, both lenses and reflectors are well known in the art and used for directing light. Thus, it would have been obvious to one of ordinary skill in the art to use

a lens or reflector in the device of Hochstein to direct the light coming from the illumination device.

Allowable Subject Matter

Claims 3, 4, 10, 11, 21, 22, 28-36 46, 47 and 51 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Prior art fails to show or suggest an illumination module comprising a dielectric layer having a plurality of LEDs and a plurality of contacts on the first side, a heat conductive body on the second side of the dielectric layer and a heat conductive surface in communication with the heat conductive body, as claimed in independent claims 2, 23 and 39 further comprising a heat conductive tab which comprises the heat conductive surface.

Prior art fails to show or suggest an illumination apparatus a housing, a heat conductive surface arranged in the interior of the housing, a illumination module mounted to the heat conductive surface comprising dielectric layer having a plurality of LEDs and a plurality of contacts on the first side, a heat conductive body on the second side of the dielectric layer and a heat conductive surface in communication with the heat

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conductive body, as claimed in independent claim 23, wherein the housing comprises a plurality of wall surfaces defining a channel.

Prior art fails to show or suggest an LED module in combination with a heat sink comprising an LED, a dielectric layer, and a plurality of electrical contacts on the first side for mounting the LED, a heat conductive body on the second side of the dielectric layer, as claimed, wherein the heat conductive body is in communication with the heat sink wherein the heat sink has a surface area greater than the surface area of the heat conductive body, as claimed in independent claim 48 wherein the mount portion is disposed at an angle relative to an adjacent portion of the heat sink member.

Conclusion


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Note the patents of Begemann et al. (6,250,774) and Hochstein (6,517,218).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to laura tso whose telephone number is 571-272-2385. The examiner can normally be reached on Thursdays and alternate Mondays and Tuesdays, 6:30-3pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, sandra o'shea can be reached on 571-272-2378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


laura tso
Primary Examiner
Art Unit 2875

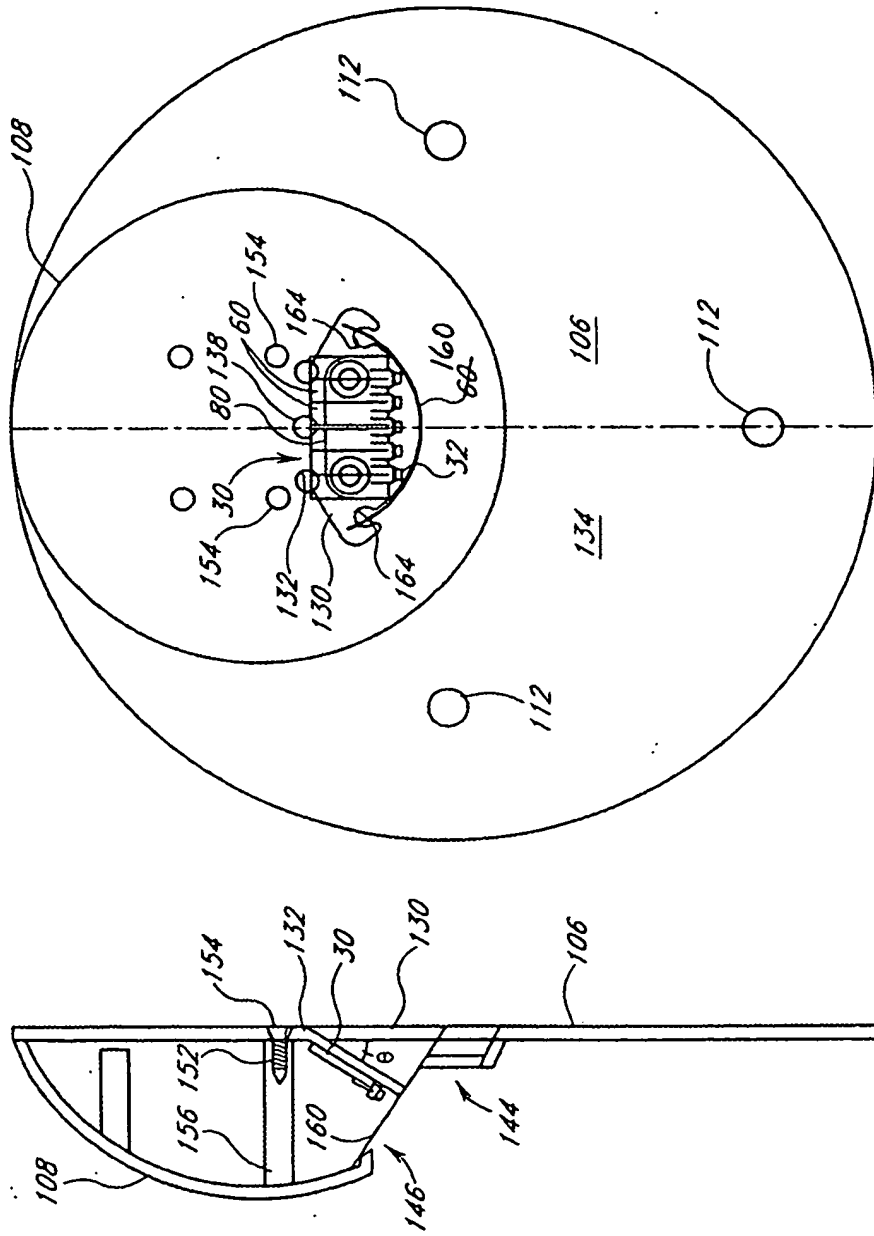


FIG. 16

FIG. 17